# EXHIBIT 188

November 23, 2022

Mr. Brett Ingerman
DLA Piper LLP (US)
The Marbury Building, 6225 Smith Avenue
Baltimore, Maryland 21209

Mr. Charlie Cowan
Clyde & Co. US LLP
271 17th Street NW Suite 1720
Atlanta, GA 30363

Mr. Andrew Halpern
Otterbourg PC
230 Park Avenue
New York, NY 10169

**CONFIDENTIAL**

**RE:** 24 Hour Fitness v. CNA, et al.
United States Bankruptcy Court, District of Delaware, Case No. 20-11558.
J.S. Held Project #22102509

Dear Mr. Ingerman, Mr. Cowan, and Mr. Halpern:

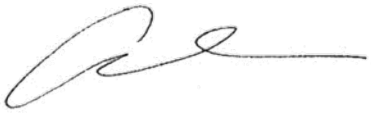
Thank you for the opportunity to conduct an epidemiological and public health assessment of the 24-Hour Fitness insurance claim asserted in the above-referenced litigation.

The following report provides summaries of my credentials, a synopsis of basic epidemiological and public health methods, a review of the data provided by 24 Hour Fitness (24-Hour), and overviews of the peer-reviewed published literature on COVID-19. For purposes of this report, I have reviewed the relevant scientific literature, analyzed the public health actions taken around the United States, and studied the relevant epidemiological data regarding COVID-19 cases. Based on my review and synthesis of the epidemiological evidence, my review of the case materials, and my education, training, and professional experience, I offer below several expert opinions, which I hold to a reasonable degree of scientific and epidemiological certainty.

I am compensated for my work in this matter at an hourly rate of $400 for this report and $450 for testimony. My compensation is not dependent on the substance of my opinions or the outcome of this matter. Please do not hesitate to contact me if you have any questions.

Sincerely,

Allison L. Stock, PhD, MPH, MS
Health Sciences Service Line Leader
JS Held Technical Fellow





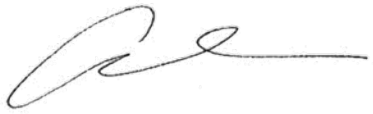
**CREDENTIALS**

1) I hold a doctoral degree in Toxicology and Epidemiology from the University of Texas School of Public Health-Houston. I also have a master's degree of Public Health in Occupational and Aerospace Medicine from the University of Texas School of Public Health-Houston. I am a former fellow of the National Institute for Occupational Safety and Health. Additionally, I have a master's degree in Forensic Toxicology from the University of Florida. I did my postdoctoral research in organic chemistry and epidemiology at the National Center for Environmental Health. I am a former Epidemic Intelligence Service Officer (EISO), and I was stationed at the US Centers for Disease Control and Prevention (CDC). I responded to large disaster events during my time as an EISO, including the September 11, 2001, terrorist attacks at the World Trade Center (the September 11 Attacks). Following the September 11 Attacks, I served in New York City, assisting the New York City Department of Health respond to the threat of anthrax. Additionally, while I was an EISO at the CDC, I responded to a variety of infectious disease outbreaks, including the first outbreak of beta coronaviruses in people (SARS-1); a multistate outbreak of Monkey Pox; one of the largest outbreaks of varicella in the United States; several large-scale norovirus outbreaks; bioterrorism agents; and anthrax.

2) I am a former US Public Health Service Officer and a former Team Leader with the Air Pollution and Respiratory Health Branch with the National Center for Environmental Health at the CDC. While at the CDC, I continued to respond to large infectious disease outbreaks such as national outbreaks of influenza and multi-state outbreaks of respiratory syncytial virus (RSV), and to large disaster events such as Hurricanes Charley, Frances, Ivan, Jeanne, Dennis, Katrina, Rita, and Wilma, and large forest fire events such as the Biscuit and Tiller fires when I became a Team Leader at the CDC. I also served on a national task force on particulate air pollution, which was staffed by the CDC, the US Environmental Protection Agency (EPA), and academic institutions.

3) I am the former Senior Epidemiologist for the Chevron Corporation, where I routinely handled matters regarding human and environmental exposures to chemical and infectious disease agents. While at Chevron, I monitored 150,000 current and former Texaco and Chevron employees for long-term health endpoints. Additionally, while at Chevron, I developed response plans and responded to outbreaks of Ebola virus in Chevron's African business units, outbreaks of viruses of unknown origin in Chevron's Kazakhstan business unit, numerous foodborne illness outbreaks across the world, influenza outbreaks including H1N1 (swine flu) throughout the world, outbreaks of unknown viruses in Chevron's Saudi Arabian business unit, Middle Eastern Respiratory Syndrome (MERS), and hantavirus infections across the continental United States. Additionally, I wrote and implemented HIV prevention strategies for the corporation and worked with numerous industry partners to implement these strategies.

4) I have over twenty-eight years of epidemiological, toxicological, and occupational health experience. In my current role, I have written COVID-19 reopening plans for large international corporations, domestic corporations, hospitality locations, schools, municipal locations, building sites, universities, large cafeterias, and restaurants. Many of these facilities included fitness facilities. I have also advised a large conference within the National Collegiate Athletic Association (NCAA) on how to best protect their athletes, coaching staff, and support personnel from COVID-19. These plans included disease prevention, transmission reduction, and cleaning and disinfection protocols and procedures regarding SARS-CoV-2.





5) I am a member of the Council of State and Territorial Epidemiologists (CSTE), the American Public Health Association (APHA), the American College of Epidemiology, the Society for Epidemiological Research, and several other epidemiological and toxicological organizations.

6) My Curriculum Vitae (CV) and testimony list are in Appendix A and B, respectively, and provide a more detailed summary of my professional experiences and activities.

**EXECUTIVE SUMMARY**

7) A virus does not grow through cell division like other microbes such as molds and bacteria. A virus must have a living host of the correct species to grow and multiply. If a droplet of SARS-CoV-2 is on a surface, SARS-CoV-2 cannot multiply and grow.

8) It is not possible from an epidemiological perspective to confirm the presence of COVID-19 at 24 Hour facilities in or around March 2020, in part because 24-Hour has not presented the data necessary to validate whether there were true cases (confirmed) of COVID-19 on 24-Hour properties. None of the call records, other documents, or testimony available provide evidence that any individual displayed signs or symptoms of COVID-19 at a 24-Hour facility. The March 2020 call records provided by Jeremy Gottlieb, subsequent emails from Dan Larson, and other information submitted by 24-Hour do not include sufficient evidence to indicate that individuals with COVID-19 infections were at 24-Hour facilities.[1] Such data would have been available for any actual COVID-19 cases because other businesses collected it at the time. Moreover, the inadequate materials that were provided refer to only a small fraction of 24-Hour's 447 facilities.[2] Thus, the documentation provided by 24-Hour is insufficient to conclude that there were numerous individuals with COVID-19 or spreading COVID-19 at 24-Hours facilities. For these reasons and the other reasons described below, there is no basis for Dr. Carnethon's conclusion that "in my professional opinion, it was in 2020, and is today, reasonable for 24HF to conclude that COVID-19 was actually present and spread at all of its locations in March 2020" or to conclude that COVID-19 was actually present at all 24-Hour's locations in March 2020.

9) Additionally, 24-Hour has not presented evidence of contact tracing to determine if individuals with the virus were on 24-Hour's premises. The records available report information that may or may not reflect a reported positive test (without notation as to the test type or where it was performed) or alternatively mere symptoms (with no reported positive test), which may or may not have been attributable to COVID-19, as opposed to allergies or another illness, such as a common cold. Other businesses in March of 2020 were collecting the type of information needed for contact tracing. Based on accepted epidemiological and public health standards as reflected in the CSTE/CDC case definition, these documents fail to demonstrate that any individual in fact had COVID-19 at the facilities.

[1] EX 0004 Jeremy Gottlieb 061722 and EX0012 Dan Larson 042822.

[2] EX 0004 Jeremy Gottlieb 061722; EX0012 Dan Larson 042822 30(b)(6); MCL000099-115 at MCL000108-09.

**OVERVIEW OF SARS-COV-2**

10) Microbes are tiny organisms that can belong to four categories: bacteria, protozoa, fungi, and viruses.[3] Viruses differ from other microbes in that they do not have a cell structure and they cannot "live" or grow and propagate independently.

11) SARS-CoV-2 is the virus that causes the disease COVID-19, which caused the global pandemic declared by the World Health Organization on March 11, 2020. The first reported case of COVID-19 in the United States (US) was documented in Everett, Washington, on January 15, 2020, in a person who had recently returned to the US from Wuhan, China.[4] On January 31, 2020, the US Secretary of the Health and Human Services declared a public health emergency in the US under the Public Health Service Act; on March 13, 2020, the US President declared a nationwide emergency.[5] Starting on March 15, 2020, state governors across the US began to issue "safer at home" orders to limit the spread of COVID-19.[6]

12) There are an estimated $1x10^{31}$ viruses in the world. They exist in a wide variety of shapes and sizes, but the basic structure of a virus is consistent.[7] All viruses are composed of a virion, which is nucleic acid genomic material (either DNA or RNA) encapsulated or covered in a protein or capsid layer.[8] Since viruses do not consist of a complete cell, viruses do not grow through cell division like other microbes.[9] Any virus must have a living host in order to grow and multiply, and the host must be of a particular species. Once in the host, the virus targets specific organ cells and does not tend to infect every cell of the host.[10] Once the virus binds to the host cell, the virus "hijacks" the cellular systems, forcing the host cell to rapidly reproduce thousands of identical copies of the original virus.[11]

13) SARS-CoV-2 is a member of the betacoronavirus family, which is a subfamily of coronavirus responsible for causing common colds and gastritis. SARS-CoV-2 is a novel variant of betacoronavirus family. Other known betacoronaviruses include SARS-CoV-1 (responsible for the outbreak of SARS in 2003) and MERS-CoV (responsible for the outbreak of MERS or Middle Eastern Respiratory Syndrome in 2012).[12] A single intact virus particle (or virion) of SARS-CoV-2 is approximately 0.1 micron or µm in size.[13] These betacoronaviruses typically infect bats, and like other viruses, have changed enough to

[3] Surana NK, Kasper DL, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. (2015). Chapter 115: Approach to the Patient with an Infectious Disease Harrison's Principles of Internal Medicine. New York: McGraw-Hill. National Institute of Allergy and Infectious Diseases (NIAID). (2006). Understanding Microbes in Sickness and in Health. NIH Publication No. 09-4941. 2006. National Center Institute (NCI). (2020). https://www.cancer.gov/publications/dictionaries/cancer-terms/def/virus.

[4] Holshue et al. 2020. First Case of 2019 Novel Coronavirus in the United States. N Engl J Med. 382:929-936

[5] US CFR. 85 FR 15337. Proclamation 9994 of March 13, 2020.

[6] CDC. COVID-19 Timeline. https://www.cdc.gov/museum/timeline/covid19.html last updated 08/16/2022.

[7] Breitbart M, Rohwer F. 2005. Here a virus, there a virus, everywhere the same virus? Trends in Microbiology. 13(6): 278-284.

[8] Caspar DL, Klug A. 1962. Physical principles in the construction of regular viruses. Cold Spring Harb Symp Quant Biol. 27:1-24.

[9] Wimmer E, Mueller S, Tumpey TM, Taubenberger JK .2009. "Synthetic viruses: a new opportunity to understand and prevent viral disease". Nature Biotechnology. 27 (12): 1163–72. Wiley–Blackwell; 10th Edition. 27 April 2007.

[10] Dimmock NJ, Easton AJ, Leppard KN. 2016. Introduction to Modern Virology, 7th Edition. Wiley-Blackwell: London.

[11] Mahy BW, Meulen, VT (Eds). 2007. Topley and Wilson's Microbiology and Microbial Infections: Virology, 10th ed. Wiley-Blackwell: London.

[12] Asrani P, Hasan GM, Sohal SS, Hassan MI. 2020. Molecular Basis of Pathogenesis of Coronaviruses: A Comparative Genomics Approach to Planetary Health to Prevent Zoonotic Outbreaks in the 21st Century. OMICS. 24(11):634-644.

[13] Bar-On YM, Flamholz A, Phillips R, Milo R. 2020. SARS-CoV-2 (COVID-19) by the numbers. Elife. 9: e57309.

allow for the transition from a bat host to a human host.[14,15] Current host animals for SARS-CoV-2 are thought to include humans, bats (horseshoe bat), palm civets, pangolins, pigs, ferrets, rodents, buffalos, cows and other bovine species, old world monkeys, turtles, snakes, frogs, marine mammals, canines, and felines (domestic and wild).[16,17,18]

14) The mortality rate of COVID-19 varies by country with Peru having the highest mortality rate of 6% or 641.71 deaths per 100,000 people. In the United States the mortality rate is 1.2% or 278-282.88 deaths per 100,000 people. The highest share of deaths from COVID-19 occurred in individuals aged 65 or older (74.4% of all deaths). Death rates in the US vary by state or large metropolitan area with New York City having a rate of 469 deaths per 100,000 people. California has a death rate of 263 deaths per 100,000 people. Vaccination to SARS-CoV-2 has been shown to reduce hospitalizations and deaths.[19]

15) One mitigation measure to reduce the spread of an illness and prevent an epidemic or a pandemic is to enact restrictions on local or international travel and trade.[20] US Government orders intended to reduce the potential spread of SARS-CoV-2 and subsequent COVID-19 cases were issued early in the pandemic.[21] By mid-March 2020, numerous governmental bodies had enacted orders prohibiting fitness centers or nonessential businesses from operating. Prior to the beginning of the pandemic, 24-Hour had approximately 447 fitness clubs open and operating in 14 states. [22] According to Tony Ueber, CEO of 24-Hour (hired in January of 2019), business was declining in 2019.[23] During the first quarter of 2020, 24-Hour closed all of its facilities by March 16, 2020, at midnight, and subsequently reopened most of them.[24,25,26] 24-Hour subsequently had additional global closures and reopenings of many of its fitness clubs at later dates.[27]

16) SARS-CoV-2 is contagious through droplet formation (coughing, sneezing, or spraying of saliva or other respiratory secretions which are greater than 5 µm). In a manner similar to other respiratory viruses,

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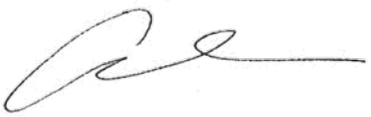
[14] Perlman S, Netland J. 2009. Coronaviruses post-SARS: update on replication and pathogenesis. Nat Rev Microbiol. 2009;7(6):439-450.
[15] . Zheng J. (2020). SARS-CoV-2: an Emerging Coronavirus that Causes a Global Threat. International journal of biological sciences, 16(10), 1678–1685. https://doi.org/10.7150/ijbs.45053.
[16] Liu YH et al. 2020. Functional and Genetic Analysis of Viral Receptor ACE2 Orthologs Reveals a Broad Potential Host Range of SARS-CoV-2. doi: https://doi.org/10.1101/2020.04.22.046565.
[17] Ruiz-Aravena, M., McKee, C., Gamble, A. et al. Author Correction: Ecology, evolution, and spillover of coronaviruses from bats. Nat Rev Microbiol (2022).
[18] Maurin et al. 2021. Current Status of Putative Animal Sources of SARS-CoV-2 Infection in Humans: Wildlife, Domestic Animals and Pets. Microorganisms. 9(4):868.
[19] Johns Hopkins Coronavirus Resource Center. Last accessed 10/31/2022.
[20] Jacobsen, Kathryn H. 2018. "Pandemics." In *The Oxford Handbook of Global Studies*, eds. Juergensmeyer Mark, Sassen Saskia, Steger Manfred B., and Faessel Victor. Oxford, UK: Oxford University Press, 647–62.
[21] Chappell, Bill. 2020. "Coronavirus: New York Creates 'Containment Area' Around Cluster in New Rochelle." NPR, March 10. https://www.npr.org/sections/health-shots/2020/03/10/814099444/new-york-creates-containment-area-around-cluster-in-new-rochelle.
[22] United States Bankruptcy Court, District of Delaware, Case No. 20-11558, filed 12/22/20.
[23] Deposition of Tony Ueber, July 27, 2022, 12:19-20:20; 26:9-39:2-7 26:12-28:20.
[24] Deposition of Tony Ueber, July 27, 2022, 12:19-20:20.
[25] Deposition of Matthew Piro, October 5, 2022,45:6-47:3.
[26] EX0003, EX0005, EX1010 Deposition of Dan Larson, 30(b) (6).
[27] EX0010 Dan Larson 30(b)(6).





it can efficiently spread from person to person when there is close contact.[28,29] This pattern of droplet and contact routes of person-to-person spread was established early on in the COVID-19 pandemic.[30,31,32,33]

17) Fine aerosol transmission (droplets that are less than 5 µm in size) is a secondary potential SARS-CoV-2 transmission route thought to occur under certain conditions. Fine aerosol transmissions have occurred in enclosed, indoor spaces with inadequate ventilation (no air exchanges or limited air exchanges from an HVAC system or pressurized locations) or when someone is actively projecting their voice without social distancing.[34,35] However, regardless of whether the viral aerosols can remain viable, SARS-CoV-2 droplets are relatively heavy and fall out of the air in seconds or minutes, unlike smoke or fine vapors.[36] Studies conducted on fine aerosols have demonstrated a lack of intact, infectious SARS-CoV-2 virus within these fine aerosols and droplet nuclei.[37]

18) According to the CDC, the current data on SARS-CoV-2 transmission indicates that, while airborne transmission is possible, the primary route of transmission is through close contact with someone who is infected with SARS-CoV-2.[38,39,40] Close contact is described as being within 2 meters or 6 feet

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[28] World Health Organization (WHO). 2020. https://www.who.int/emergencies/diseases/novel-coronavirus- 2019/question-and-answers-hub/q-a-detail/q-a-how-is-covid-19-transmitted. Last Updated 10/20/2020. Lu J, Gu J, Li K, et al. COVID-19 outbreak associated with air conditioning in restaurant, Guangzhou, China, 2020. Emerg Infect Dis. 2020; 26:1628-1631.

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[30] Burke R.M. MMWR; 2020. Active Monitoring of Persons Exposed to Patients with Confirmed COVID-19—United States, January–February 2020. Morbidity and mortality weekly report, Centers for Disease Control and Prevention (CDC). 69.

[31] Chan J.F.W., Yuan S., Kok K.H., To K.K.W., Chu H., Yang J., Xing F., Liu J., Yip C.C.Y., Poon R.W.S., Tsoi H.W. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. Lancet. 2020; 395:514–523.

[32] Li Q., Guan X., Wu P., Wang X., Zhou L., Tong Y., Ren R., Leung K.S., Lau E.H., Wong J.Y., Xing X. Early transmission dynamics in Wuhan, China, of novel coronavirus–infected pneumonia. N. Engl. J. Med. 2020.

[33] WHO. 2020. https://www.who.int/publications/i/item/10665-331495 and World Health Organization. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations. 2020. Available at: https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations.

[34] Netz RR. Eaton WA. Physics of virus transmission by speaking droplets. Proceedings of the National Academy of Sciences Oct 2020, 117 (41) 25209-25211; DOI: 10.1073/pnas.2011889117

[35] Das SK, Alam JE, Plumari S, Greco V. Transmission of airborne virus through sneezed and coughed droplets. 2020. Physics of Fluids.32(9). https://doi.org/10.1063/5.0022859 Chia P.Y. Detection of air and surface contamination by SARS-CoV-2 in hospital rooms of infected patients. Nat. Commun. 2020;11(1):1–7. Santapia JL., et al. The Infectious Nature of Patient-Generated SARS CoV-2 aersol. Journal of Exposure Science & Environmental Epidemiology.

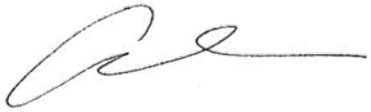
[36] CDC. 2021. https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html. Last updated 5/7/21.

[37] Johnson, T.J., Nishida, R.T., Sonpar, A.P. *et al.* 2022. Viral load of SARS-CoV-2 in droplets and bioaerosols directly captured during breathing, speaking, and coughing. *Sci Rep* **12**, 3484.

[38] CDC. 2021. https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html.

[39] Pringle JC, Leikauskas J, Ransom-Kelley S, et al. COVID-19 in a Correctional Facility Employee Following Multiple Brief Exposures to Persons with COVID-19 — Vermont, July–August 2020. MMWR Morb Mortal Wkly Rep 2020; 69:1569–1570. DOI: http://dx.doi.org/10.15585/mmwr.mm6943e1external icon.

[40] Meyerowitz EA, Richterman A, Gandhi RT, Sax PE. Transmission of SARS-CoV-2: A Review of Viral, Host, and Environmental Factors. Ann Intern Med. 2021 Jan;174(1):69-79. doi: 10.7326/M20-5008.





of an individual who has the virus for a total of 15 minutes over a 24-hour period. CDC has put the risk of fomite or surface transmission at 1 in 10,000th risk.[41]

19) A significant percentage of people (15-40% depending on the populations studied) infected with SARS-CoV-2 are asymptomatic (do not have any signs or symptoms of infection), are pre-symptomatic (again, do not have any signs or symptoms of infection), or have mild symptoms of COVID-19.[42,43,44] These rates are highest among nursing home residents and lower among community residents.

20) The American Society of Heating, Refrigeration, and Air Conditioning (ASHRAE), an organization to advance science around building systems, energy efficiency, indoor air quality, refrigeration, and sustainability, which traces its origins to the late 1800s, has published guidance in collaboration with both the CDC and the US EPA to reduce airborne infectious aerosol exposures.[45] These standards include recommendations such as the use of barriers, increased ventilation, and increased air exchange rates to reduce COVID-19 spread. If this guidance is followed, it mitigates the risks of potential exposures.[46]

21) Laboratory studies conducted to evaluate inoculated surfaces such as aluminum, slick and matte plastics, glass, paper, cardboard, and other surfaces with either SARS-CoV-2 or other coronaviruses and have demonstrated detectable, intact virus up to seventy-two (72) hours or longer after contamination.[47] However, it is important to note that these survival times were found in a laboratory with conditions such as controlled humidity ranges and temperatures that would be ideal to keep the virus intact. Additionally, these experiments used extreme concentrations of the virus on the surfaces at the point of contamination, which would be higher than normal droplet or aerosol levels for the virus in real life exposure.[48] The timeframe for the presence of detectable, intact virus in these

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[41] https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.html

[42] Byambasuren O, et al. (2020). Estimating the extent of asymptomatic COVID-19 and its potential for community transmission: Systematic review and meta-analysis. Official Journal of the Association of Medical Microbiology and Infectious Disease Canada. 5(4): 223-234.

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[45] ASHRAE. 2021. https://www.ashrae.org/technical-resources/resources.

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[47] Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect. 2020; 104:246–251.

van Doremalen N, Bushmaker T, Morris DH, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1 [Letter]. N Engl J Med. 2020; 382:1564-1567.

Chin AWH, Chu JTS, Perera MRA, et al. Stability of SARS-CoV-2 in different environmental conditions. Lancet Microbe. 2020;1: e10.

J. Biryukov, J. A. Boydston, R. A. Dunning, J. J. Yeager, and e. al., "Increasing temperature and relative humidity accelerates inactivation of SARS-CoV-2 on surfaces," mSphere, vol. 5, no. 4, pp. e00441-20, 2020.

Y. Liu, T. Li, Y. Deng, S. Liu, D. Zhang, H. Li, X. Wang, L. Jia, J. Han, Z. Bei, and L. Li, "Stability of SARS-CoV-2 on environmental surfaces and in human excreta," Journal of Hospital Infection, vol. 107, pp. 105-107, 2021.

S. Riddell, S. Goldie, A. Hill, D. Eagles and T. W. Drew, "The effect of temperature on persistence of SARS-CoV-2 on common surfaces," Virology Journal, vol. 17, no. 1, pp. 1-7, 202.

[48] Lindsley WG, Blachere FM, Thewlis RE, Vishnu A, Davis KA, Cao G, Palmer JE, Clark KE, Fisher MA, Khakoo R, Beezhold DH. Measurements of airborne influenza virus in aerosol particles from human coughs. PLoS One. 2010 Nov 30;5(11): e15100.

experiments represents an outer limit of the time it would take for the virus to degrade into viral fragments. Current scientific information finds that a fomite (an object such as a dish, doorknob, or article of clothing that may be contaminated with infectious agents such as bacteria or viruses and serve in their transmission) is not a primary route of transmission of COVID-19. Fomite transmission refers to where the virus resides on the surface of an object and transmission is spread through human contact with that surface.[49] To date, there are no known confirmed cases of fomite transmission of the SARS- CoV-2 virus.[50,51,52,53] The CDC advises that, although transmission of SARS-CoV-2 by touching surfaces that have the virus on them and then touching one's mouth, nose, or eyes "may be possible," transmission from surfaces is "not thought to be the main way the virus spreads" and the CDC puts the risk of transmission from a surface at 1 in 10,000.[54] According to Dan Larson, 24-Hour's Environmental, Health & Safety Manager, 24-Hour took such steps at their facilities to reduce the already low risk of fomite transmission by enhanced cleaning procedures, which are proven methods of further reducing any fomite transmission risk.[55]

22) According to the CDC, "*SARS-CoV-2, the virus that causes COVID-19, is an enveloped virus, meaning that its genetic material is packed inside an outer layer (envelope) of proteins and lipids. The envelope contains structures (spike proteins) for attaching to human cells during infection*."[56] In contrast to other diseases that have community-based transmission such as tuberculosis and norovirus, the envelope for SARS-CoV-2, as with other enveloped respiratory viruses, is labile or easily broken down, and can degrade quickly upon contact with surfactants contained in cleaning agents and EPA disinfectants.[57]

23) The SARS- CoV-2 virus can be eliminated by use of an EPA-approved disinfectant.[58,59] Moreover, the virus will degrade into fragments in a short period of time. The timeframe for such natural degradation can be shortened by exposure to sunlight and light in general, changes in humidity, and changes in temperature. To prevent the spread of COVID-19 among people, the current best practices are to get vaccinated, increase hand washing, wear face coverings, avoid poorly ventilated spaces and crowds, get tested following symptoms or a known exposure, and increase hygiene.[60] Masks and respirators

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[49] Dimmock NJ, Easton AJ, Leppard KN. 2016. Introduction to Modern Virology, 7th Edition. Wiley-Blackwell: London.
[50] CDC. April 5, 2021. https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface- transmission.html.
[51] Sean Horoho, MC, USN, Stephen Musik, USN, David Bryant, MC, USN, William Brooks, MC, USN, Ian M Porter, MC, USN, Questioning COVID-19 Surface Stability and Fomite Spreading in Three Aeromedical Cases: A Case Series, Military Medicine, Volume 186, Issue 7-8, July-August 2021, Pages e832–e835, https://doi.org/10.1093/milmed/usaa548.
[52] South Australian Health & Medical Research Institute. 2021. https://www.sahmri.org/m/uploads/2021/09/01/fomites-covid-19-evidence-update-23-aug-2021.pdf.
[53] Zhou, L., Ayeh, S.K., Chidambaram, V. et al. Modes of transmission of SARS-CoV-2 and evidence for preventive behavioral interventions. BMC Infect Dis 21, 496 (2021). https://doi.org/10.1186/s12879-021-06222-4.
[54] CDC. 2021B. https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.html.
[55] Deposition of Dan Larson, April 28.2022, 21:14-24:18.
[56] https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.html.
[57] Dimitrov, D. Virus entry: molecular mechanisms and biomedical applications. Nat Rev Microbiol 2, 109–122 (2004). https://doi.org/10.1038/nrmicro817. https://www.cdc.gov/norovirus/about/index.html.
[58] CDC. 2021. https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html
[59] CDC. 2022. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html last updated 1/20/2022.
[60] CDC. 2022. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html last updated 1/20/2022. Pauser, J., Schwarz, C., Morgan, J., Jantsch, J., & Brem, M. (2021). SARS-CoV-2 transmission during an indoor professional sporting event. Scientific reports, 11(1), 20723. https://doi.org/10.1038/s41598-021-99997-0; Oluwasanmi O Adenaiye, Jianyu

work to decrease transmission of COVID-19 since most virions of SARS-CoV-2 are found in large respiratory droplets of greater than 5 µm. These recommendations other than vaccination instructions were present even as early as March of 2020.[61] There were frequent cleanings of the 24-Hour facilities including deep cleanings following the report of a suspect COVID-19 having been on the premises.[62] This was standard procedure following reports of other infectious diseases such as measles or tuberculosis on the properties. Additionally, changes were made to the ventilation and layout of equipment. There was guidance from CDC, ASHRAE, and the International Health, Racquet, and Sportsclub Association (IHRSA), which is the global health and fitness association, to operate fitness facilities safely such as increased cleaning and disinfecting, spacing out equipment, canceling group classes, and increasing ventilation.

**BASIC EPIDEMIOLOGICAL PRINCIPLES**

24) The principles below apply to all diseases and were in existence during March 2020.

25) The CDC defines epidemiology as "*the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems*."[63] Additionally, epidemiology is more than the study of health in a population, it is the use of the scientific method and epidemiologic judgment along with the understanding of local conditions in determining the health of a community and proposing appropriate, practical, and acceptable public health interventions to control and prevent disease.

26) In epidemiology, in order to determine what qualifies as a "case," the epidemiologist must create a case definition, which is a set of appropriate standard criteria used for classification of a particular disease, syndrome, or health condition. A case definition typically consists of clinical criteria, along with laboratory test results if there is a test for the disease, and can also have limitations on time, place, and person.

27) When diseases and/or exposures are classified imprecisely or erroneously, misclassification occurs, which can result in biases that distort the apparent association between exposure and the disease outcome of interest. Misclassification can either overestimate or underestimate the true number of cases or risks associated with a primary exposure of interest and the outcome, either diminishing or inflating the estimated measurements of the disease or risk in the population of interest.

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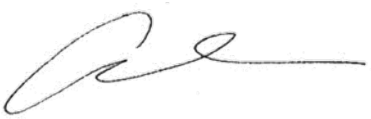
Lai, P Jacob Bueno de Mesquita, Filbert Hong, Somayeh Youssefi, Jennifer German, S-H Sheldon Tai, Barbara Albert, Maria Schanz, Stuart Weston, Jun Hang, Christian Fung, Hye Kyung Chung, Kristen K Coleman, Nicolae Sapoval, Todd Treangen, Irina Maljkovic Berry, Kristin Mullins, Matthew Frieman, Tianzhou Ma, Donald K Milton, University of Maryland StopCOVID Research Group, Infectious Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in Exhaled Aerosols and Efficacy of Masks During Early Mild Infection, Clinical Infectious Diseases, 2021;, ciab797, https://doi.org/10.1093/cid/ciab797

[61] CDC. Coronavirus disease 2019 (COVID-19): how to protect yourself & others. Atlanta, GA: US Department of Health and Human Services, CDC; 2020. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html. harpure R, Hunter CM, Schnall AH, et al. 2020. Knowledge and Practices Regarding Safe Household Cleaning and Disinfection for COVID-19 Prevention — United States, May 2020. MMWR Morb Mortal Wkly Rep 2020; 69:705–709.

[62] Deposition of Dan Larson, April 28,2022, 25:2-63:15; Deposition of Tony Ueber, July 27, 2022, 72:8-73:3; Deposition of Amy Christensen, June 24, 2022,17:21-18:8.

[63] CDC. Introductions to Epidemiology. https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section1.html





28) To ensure that all health organizations in the US are using a standard case definition for collecting information on notifiable diseases, the Council of State and Territorial Epidemiologists (CSTE) defines the case criteria for notifiable diseases and some other non-notifiable disease that are emerging issues for public health. The CTSE consists of those engaged in the practice of epidemiology for governmental public health at the state, local, tribal, or territorial level and CDC employees, military public health officials, and individuals like me who can provide feedback on proposed case definitions and standards of epidemiological practice to support effective public health surveillance and promote effective use of epidemiological data. The CDC adopts and uses the case definitions created by CSTE for all reportable diseases and non-reportable diseases that have CSTE case definitions.

29) The CSTE has defined criteria for a case of COVID-19, the disease caused by SARS-CoV-2.

    a. Confirmatory Test: An accepted test that confirms the individual has COVID-19. The CSTE has categorized what qualifies as a confirmatory test versus one that only creates a presumptive case of COVID-19 or is supportive of COVID-19 as follows:

    b. Confirmatory

        i. Detection of SARS-CoV-2 ribonucleic acid (RNA) in a clinical specimen using a diagnostic molecular amplification test performed by a Clinical Laboratory Improvement Amendments (CLIA)-certified provider; or

        ii. Detection of SARS-CoV-2 by genomic sequencing

    c. Presumptive

        i. Detection of SARS-CoV-2 specific antigen in a clinical sample or specimen using a diagnostic test performed by a CLIA-certified provider

    d. Supportive

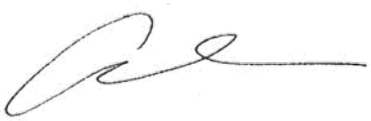
        i. Detection of antibody in serum, plasma, or whole blood.

    e. Detection of SARS-CoV-2 specific antigen by immunochemistry post-mortem; or

    f. Detection of SARS-CoV-2 RNA or antigen using a test performed without CLIA oversight.

30) In the fields of public health and epidemiology, individuals (or "cases") with potential COVID-19 infection are classified as either suspect, probable, or confirmed. A case with only a positive supportive test result is classified as ***suspect***. Suspect is not counted as an actual case and would not be considered in the case count data. A ***probable*** case must meet the clinical criteria (signs or symptoms listed above) AND either epidemiological linkage (contact with a confirmed or probable case of COVID-19) OR presumptive laboratory evidence. A probable case is also not counted as an actual case, though it may be counted in a separate line listing of probable cases and would not be part of the total number of cases associated with an event or disease tracking. A ***confirmed*** case meets confirmatory laboratory evidence and is used to inform public health decisions. The confirmed case count numbers for COVID-19 were the case counts provided at the local or state level, since they were based on reported test results by laboratories or medical providers.

31) Using the CSTE case criteria, home testing is considered supportive testing, and a positive at-home COVID-19 antigen test would only establish a suspect case. The case would be treated as suspect until and unless confirmed by test results from a CLIA supported laboratory (at which point it would be elevated to either probable or confirmed, depending on the type of laboratory test performed and





whether other signs or symptoms were observed). A probable or presumptive case requires signs or symptoms of the disease along with a positive non-RNA clinical test. A confirmed case only occurs when there is a confirmatory clinical test.

**REPORT OF MERCEDES R. CARNETHON, PHD, FAHA**

32) Dr. Carnethon is an epidemiologist with a background chronic disease epidemiology and is a Fellow of the American Heart Association. While Dr. Carnethon is an academic epidemiologist, she has no practical public health experience and has not worked for a local, state, or public health agency. She is not a member of the American Public Health Association (APHA) (according to the organization member directory) or CSTE, two of the largest public health practitioner organizations within the US. CSTE is the organization that writes the surveillance case definitions for all US public health agencies, including CDC. She has focused her career on the "epidemiology of cardiovascular disease, obesity, diabetes, lung health and cognitive aging in the population subgroups defined by race/ethnicity, geography, socioeconomic status, gender and sexual orientation/gender identity."[64]

33) Contrary to what Dr. Carnethon claims, it is not possible from an epidemiological perspective to confirm the presence of COVID-19 at 24-Hour facilities in or around March 2020, in part because 24-Hour has not presented the data necessary to validate whether there were true cases (confirmed) of COVID-19 on 24-Hour properties. None of the call records, other documents, or testimony available provide evidence that any individual had COVID-19 at a 24-Hour facility. The March 2020 call records provided by Jeremy Gottlieb, emails from Dan Larson and other information submitted by 24-Hour do not include sufficient evidence to indicate that individuals with COVID-19 infections were at 24-Hour's facilities.[65] Such data would have been available for any actual COVID-19 cases because other businesses collected it at the time. Moreover, the inadequate data that was provided refers to a small fraction of 24-Hour's 447 facilities.[66] The documentation provided by 24-Hour is insufficient to conclude that there were numerous individuals with COVID-19 or spreading COVID-19 at 24-Hour's facilities, let alone at all of 24-Hour's facilities.

34) Dr. Carnethon states that SARS-CoV-2 was circulating within the US as early as January 2020. However, this statement is misleading because it implies that there was rampant spread of the virus in the early months of the pandemic in the US. However, there were no known, confirmed cases in the US until the first case was identified in January 2020 in a traveler. There are two serology studies were conducted on previously banked blood samples, and neither supports Dr. Carnethon's conclusion.

    a. CDC conducted an analysis of 7,389 samples from blood banks across the United States collected between December 13, 2019, to January 17, 2020.[67] In this study:

        i. 106 (1.4%) of these samples reacted to one serological test (enzyme linked immunosorbent assay (ELISA)) that might indicate cross reactivity with one of two

[64] Faculty Profile of Mercedes Carnethon. https://www.feinberg.northwestern.edu/faculty-profiles/az/profile.html?xid=14797
[65] EX 0004 Jeremy Gottlieb 061722; EX0012 Dan Larson 042822 30(b)(6); MCL000099-115 at MCL000108-09.
[66] EX 0004 Jeremy Gottlieb 061722; EX0012 Dan Larson 042822 30(b)(6); MCL000099-115 at MCL000108-09.
[67] Basavaraju et al. 2021. Serologic Testing of US Blood Donations to Identify Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)–Reactive Antibodies: December 2019–January 2020. *Clinical Infectious Diseases*. 72(12): e1004–e1009.

spike proteins. However, the study's authors noted that due to time limitations, the serological testing did not include background corrections.

ii. Further analyses yielded only 4 positive tests when background corrections were applied to serial dilutions.

iii. Confirmatory testing yielded a single sample ($1.35x10^{-4}$%) from Northern California which might have been due to cross-reactivity of the sample with other viruses.

iv. Additional limitations om that study include the following:

1. Travel cannot be ruled out as a reason for the serological sample was positive.

2. The sample could have been cross-reacting for individuals that had previous betacoronavirus infections.

b. In a second study, individuals who lived in California, Massachusetts, Alabama, Illinois, Pennsylvania, Arizona, New York, Wisconsin, Florida, and Michigan had blood drawn between January 2, 2020, and March 18, 2020. The total sample size was 24,079.[68]

i. 9 participants ($3.73 \times 10^{-4}$%) met the first study criteria for a positive test.

ii. 7 participants ($3.91 \times 10^{-4}$%) were considered to be positive for all study criteria. Additionally, some of these results fell within the estimates of false positive rates.

iii. Only 2 of the 7 had COVID-like symptoms as of the date of questionnaire distribution.

iv. The study had the following limitations

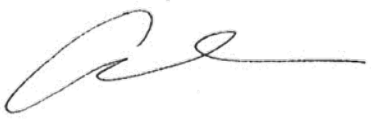
1. No rtPCR testing was done on the samples which is the clinical test used to confirm true COVID-19 illness.

2. No data or contact tracing was done to determine if these positive results were the result of travel to hot spots of the disease in the US or outside of the US.

c. One can conclude from those serological tests that while there might have been low level circulation of the virus in early January 2020, there was not widespread distribution of the virus (such as later observed in the mid to later months of 2020), as described by Dr. Carnethon. In January through March of 2020, there was highly localized transmission in locations such as California, Seattle, and New York City.[69] Moreover, the laboratory tests

[68] Keri N Althoff, David J Schlueter, Hoda Anton-Culver, James Cherry, Joshua C Denny, Isaac Thomsen, Elizabeth W Karlson, Fiona P Havers, Mine S Cicek, Stephen N Thibodeau, Ligia A Pinto, Douglas Lowy, Bradley A Malin, Lucila Ohno-Machado, Carolyn Williams, David Goldstein, Aymone Kouame, Andrea Ramirez, Adrienne Roman, Norman E Sharpless, Kelly A Gebo, Sheri D Schully, on behalf of the All of Us Research Program, Antibodies to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in *All of Us* Research Program Participants, 2 January to 18 March 2020, *Clinical Infectious Diseases*, Volume 74, Issue 4, 15 February 2022, Pages 584–590,

[69] Althoff, et al. 2022. Antibodies to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in All of Us Research Program Participants, 2 January to 18 March 2020, Clinical Infectious Diseases. 74(4): 584–590.



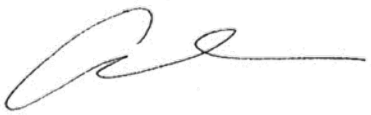


in both of these studies would only be considered, at best, as supportive information and cannot be used to classify these positive results as true confirmed cases using the CSTE/CDC case definition for a confirmed case of COVID.

35) In Table 2 of her report, Dr. Carnethon relies on averages (average daily guest and member counts at 24-Hour facilities) from 284 unspecified clubs operated by 24-Hour to form her opinions. In addition, this information does not capture information regarding the number of members or guests who visited any particular club or location, and only includes information from 284 of 24-Hour's 447 clubs. Consequently, this information, based on averages, cannot be used to determine any meaningful rate or conclusion since, as discussed above, COVID-19 cases during this time frame had only localized distribution. Additionally, the data reflected is for the 73-day period from January 1, 2020, until March 13, 2020, but the numbers of members and guests who visited 24-Hour's fitness clubs during January and February of 2020, can be expected to be substantially greater during those months than during March 2020. Moreover, while 24-Hour shut down all or virtually all of its fitness clubs on March 16, 2020, primarily at midnight on that date, Table 2 fails to include any data from March 14 until March 16, 2020. Consequently, there is no basis for Dr. Carnethon's conclusion that, "in my professional opinion, it was in 2020, and is today, reasonable for 24HF to conclude that COVID-19 was actually present and spread at all of its locations in March 2020," or to conclude that COVID-19 was actually present at 24-Hour's locations in March 2020.

36) Dr. Carnethon argues that testing underrepresented the number of true cases of COVID-19 in the population in March and April of 2020 and asserts that cases were widespread and could not be counted due to the lack of readily available tests. CDC in May of 2020 conducted an analysis of why the spread occurred quickly in March and April of 2020 and did not determine that the lack of testing was a factor in how cases were counted and spread. There were four main factors recognized by CDC: 1) continued importation of the virus from travelers (cruise ships or other countries where COVID-19 was rapidly spreading); 2) events and gatherings where people from different locations gathered and then returned to their home communities such as Mardi Gras in Louisiana, an international professional meeting in Massachusetts, and funerals; 3) workplaces where there were high-risk situations such as long term care facilities, prisons, and homeless shelters; 4) crowded conditions such as schools, workplaces like meat packing facilities; and 5) cryptic transmission where there was pre-symptomatic or asymptomatic spread or co-infection with other viruses.[70] While testing may have been an issue, many state and local health department recognized the same issues document by CDC in their retrospective article and took steps to reduce spread through stay at home orders and surveillance with robust contact tracing to reduce spread to compensate for the lack of readily available tests. Data from March 17, 2020, indicates that there were 1,399 new cases in the US in several large, core urban areas such as New York City and it was later in the year when cases peaked in July (7/22/20 69739 cases) and December (12/18/2020 251190 cases) of 2020.[71,72] These later time

[70] Schuchat A. 2020. Public Health Response to the Initiation and Spread of Pandemic COVID-19 in the United States, February 24–April 21, 2020. MMWR Morb Mortal Wkly Rep; 69:551–556.
[71] New York Times. 2022. Coronavirus in the US: Latest Map and Case Count. https://www.nytimes.com/interactive/2021/us/covid-cases.htm last updated 11/22/2022
[72] *COVID-19 Stats:* COVID-19 Incidence, by Urban-Rural Classification — United States, January 22–October 31, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:1753. DOI: http://dx.doi.org/10.15585/mmwr.mm6946a





frames were when stay at home orders expired and the virus had spread to more rural or small metropolitan areas.

37) On page 4 of her report (paragraph 4, under *IV Summary of Opinions*), Dr. Carnethon states that the only satisfactory public health solutions were lock downs and quarantines. She goes on further to describe the "*innumerable surfaces exposed to potential contamination from the virus*." However, Dr. Carnethon was incorrect because there were many public health recommendations proposed early on. By March and April 2020, there were effective solutions for cleaning and disinfecting surfaces along with ventilation and barrier strategies to reduce transmission. These solutions, which 24-Hour had experience in the past implementing when there were cases of measles, tuberculosis, or infectious diseases, were implemented by 24-Hour fitness along with other options such as touchless check in and using their app versus traveling to a facility.[73]

38) Dr. Carnethon incorrectly states the size of a virion of SARS-CoV-2 as being 1 micron when in fact the size is one tenth of the size she states.

**CONCLUSIONS**

My opinions and conclusions within this report have been formulated within a reasonable degree of scientific certainty based on my observations, education, training, and professional experience. I reserve the right to determine the impact of new evidence and revise my opinions if additional information is provided for my review.

39) A virus does not grow through cell division like other microbes such as molds and bacteria. A virus must have a living host of the correct species to grow and multiply. If a droplet of SARS-CoV-2 is on a surface, SARS-CoV-2 cannot multiply and grow.

40) It is not possible from an epidemiological perspective to confirm the presence of COVID-19 at 24-Hour facilities in or around March 2020, in part because 24-Hour has not presented the data necessary to validate whether there were true cases (confirmed) of COVID-19 on 24-Hour properties.

41) There is no basis for Dr. Carnethon's conclusion that, "in my professional opinion, it was in 2020, and is today, reasonable for 24HF to conclude that COVID-19 was actually present and spread at all of its locations in March 2020," or to conclude that COVID-19 was actually present at all 24-Hour facilities locations in March 2020.

42) 24-Hour has not presented evidence of contact tracing to determine if individuals with the virus were on 24-Hour's premises. The records available report information that may or may not reflect a reported positive test (without notation as to the test type or where it was performed) or alternatively mere symptoms (with no reported positive test), which may or may not have been attributable to COVID-19, as opposed to allergies or another illness, such as a common cold. Other businesses in March of 2020 were collecting the type of information needed for contact tracing. Based on accepted epidemiological and public health standards as reflected in the CSTE/CDC case definition, these documents fail to demonstrate that any individual in fact had COVID-19 at the facilities.

[73] Deposition of Dan Larson, April 28, 2022, 21:13;25:2-26:22; Exhibit 14 Dan Larson.

# APPENDIX A

# CV

## Experienced In

- Epidemiology
- Toxicology
- Environmental
- Human Health Risk Assessments
- Chemical Exposures
- Foodborne & Infectious Disease Outbreaks
- Petrochemical Exposures
- Air Quality Issues

## Education

Ph.D., Toxicology/Epidemiology, University of Texas School of Public Health
M.S., Forensic Toxicology, University of Florida
M.P.H., Occupational Health and Aerospace Medicine, University of Texas School of Public Health
B.A., Biology and Art History, Trinity University

## Military Experience

Lt. Commander

## Project Geographical Experience

U.S., Africa, Europe, Asia

## Language

English, French

## Summary of Experience

Dr. Allison Stock has over 25 years of epidemiological, toxicological, and environmental experience. She has worked nationally and internationally with local and federal governments as well as private industry. Her expertise includes human health risk assessments and the impacts following environmental, occupational, and pharmaceutical exposures. Additionally, Dr. Stock has extensive epidemiological experience and has conducted large human health studies following exposures to environmental agents such as lead, petrochemicals, and formaldehyde, and infectious agents such as SARS, Salmonella and Legionella. She has served on both federal and industry working groups on air pollution issues such as particulate matter, low sulfur diesel exhaust, and benzene.

## Speaking Engagements

"COVID-19: The Science and What We Know (Now), and Issues We Are Dealing With." JS Held Expert Series

"It's Not Always a Gut Feeling." PLRB Podcast

"Municipal Water Issues." Claims and Litigation Management
"What is Really in your Swimming Pool." World Waterpark Association
"What Your Expert Needs to Do." DRI Toxic Torts and Environmental Law
"IARC Updates to Benzene." Harris Martin Conference
"Marijuana and Driving." Arizona Claims Association

## Expert/Testifying Experience

Dr. Stock has served as a corporate representative and an expert witness for litigation support. Expert witness on matters involving environmental, occupational, infectious disease, worker compensation, drug, and alcohol exposures.

## Professional Affiliations/Memberships/Licenses/Training

Society of Toxicology – Full Member
Association of Women in Science – Member
International Society for Environmental Epidemiology – Member
American College of Toxicology – Full Member
American College of Epidemiology – Full Member
American Public Health Association – Member
Council of State and Territorial Epidemiologists – Member
Society of Practitioners of Health Impact Assessment – Member
National Environmental Health Association – Member

## Role at J.S. Held

Dr. Stock is the Health Sciences Service Line Leader within Environmental, Safety, and Health.

## Contact

365 Canal St., Suite 2760, New Orleans, LA 70130 | +1 (504) 561-6563 (O)| +1 225-335-5854 (M) | astock@jsheld.com

## Select Work Experience

**Principal Consultant**

**Rimkus Consulting Group.** Responsible for providing senior technical support for the Toxicology and Food Safety Division of Rimkus. Duties include the evaluation of human health impacts from drugs including alcohol, illicit, and prescription drugs, chemical exposures in the environment or workplace, and chemicals in consumer products, as well as providing litigation and regulatory toxicological support.

**Senior Epidemiologist**

**Chevron USA.** Responsible for creating and implementing health, environment, and safety plans and procedures for upstream business units and major capital projects. Managed environmental, social, and public health impact assessment process for all of Chevron Upstream, along with conducting impact assessments for Chevron Upstream. Also managed property transfer process for Chevron Upstream and provided guidance on due diligence, data room storage, health, environment, and safety reports, and identification of liabilities for several new country entries and sale/purchase of existing assets. Responsible for monitoring 150,000 current and former Texaco and Chevron employees for long term health exposures. Additionally, corporate representative and expert witness for toxic tort litigation cases.

**Senior Scientist**

**U.S. Centers for Disease and Prevention (Lt. Commander).** Responsible for leading the Air Pollution Team and providing epidemiological, toxicological, and technical expertise in planning scientific studies. Duties included designing and implementing epidemiological studies addressing emerging issues in air pollution and respiratory health such as biomass exposures, legionella outbreaks, formaldehyde (Katrina trailers), PM2.5 exposures, carbon monoxide poisoning, asthma and chronic obstructive pulmonary disease, infectious diseases, and mold exposures. Additional duties included responding to large scale disasters such as hurricanes, wildland forest fires, and train car derailments. Also created a unique surveillance system for carbon monoxide poisoning in the US. Provided support to the states through the National Asthma Control Program. Routinely created interagency and congressional briefings, along with interacting with the general public and the press. Served on several federal taskforces related to air pollution issues.

**Epidemic Intelligence Service (EIS) Officer**

**Epidemic Intelligence Service, CDC (Lieutenant).** Conducted field investigations in response to emerging public health issues such as varicella, SARS, 9/11 Response, anthrax outbreak, monkey pox, cruise ship outbreaks of Norwalk virus, lead exposures in children, legionella, communicable diseases, and mold exposures. The investigations entailed the evaluation, and interpretation of surveillance data regarding various disease-detection systems. The field investigations were conducted to provide epidemiological support to state health departments that request assistance.

**Laboratory Technician**

Brooks Airforce Base, University of Texas Health Science Center Houston, Baylor College of Medicine

**Fellowships:**

**National Institute for Occupational Safety and Health.** Tracked fatalities among children living and working in agricultural communities and provided fatality prevention recommendations to the Consumer Product Safety Commission.

**US Centers for Disease Control and Prevention.** Designed and implemented experiments to understand the metabolism of phthalates and polychlorinated phenols. Responsible for testing and creating methods for analyzing chemical terrorism agents. Provided Chemical Terrorism Representation for the Commonwealth of Virginia.

## Selected Project Experience

**Environmental Exposure Projects**

- Soil testing and contamination mapping of alfalfa and hay fields following herbicide over-spray.
- Analysis of the impact to flora and fauna at a large recreational area following exposures to recycled wastewater.
- Evaluation of the regulatory application of oil and gas well drilling chemicals
- Evaluated potential mold and other indoor exposures and the claimed health effects for clients such as a large military housing unit, newly constructed multi-family and single-family housing, and existing housing. Additionally, provided litigation support to the clients.
- Provided guidance to Upstream and Gas business units on Property Transfer including due diligence, data room storage, HES reports, and identification of liabilities. Assisted in two new country entries (one South American and one African) and several domestic large asset transfers.
- Former member of CONCAWE Low Sulphur Diesel working group. Provided observer status to CONCAWE for World Health Organization (WHO) and IARC hearings on low sulfur diesel emissions and health effects. Provided epidemiological and toxicological support for written responses to WHO and IARC.
- Former member of an API science committee.
- Former member of a PM2.5 Federal Taskforce.
- Created impact assessment reports along with impact mitigation/management plans for major capital projects across the US, South America, Africa, and Asia which included oil and gas operations, solar farms, and wind farms
- Responsible for filing environmental permits for several offshore projects in Africa including the license to build, license to install, and the license to operate.
- Critically reviewed the literature and vendor-provided information on hydrofracturing fluids. Created company white paper on testing guidelines for ground water and other environmental media.
- Created and implemented a study to track health effects and long-term exposures to formaldehyde in children on the US Gulf Coast following Hurricane Katrina.
- Tracked large scale poisonings to carbon monoxide following large natural disasters. Created an information program for carbon monoxide poisoning prevention and established a novel surveillance system for carbon monoxide.
- Conducted large scale study of mold impacted housing and potential health effects for several Tribal communities across the US.
- Worked with several Western US state health departments to devise monitoring plan for health effects following large scale wildland forest fires.
- Conducted research for the National Report on Human Exposure to Environmental Chemicals. Responsible for phthalate and polychlorinated bisphenols laboratory analyses.

**Occupational Exposure Projects**

- Evaluated occupational exposures to mineral spirits, xylene, toluene, gasoline, benzene, and other petrochemical products.
- Reviewed the epidemiological and toxicological literature to evaluate whether there is an association between noise exposure and hearing loss. Used findings to write a noise exposure standard for a global Fortune 500 company.
- Tracked 150,000 current and former employees of a Fortune 500 company for long term health effects following petrochemical exposures.
- Evaluated occupational exposures to asbestos for both a Fortune 500 company and clients.
- Created and implemented a field study to develop a biomarker for wood smoke exposure at two sites over a three-year period. Monitored wildland forest firefighters for personal exposures to wood smoke and a urinary biomarker for wood smoke exposure.
- Evaluated mechanism and latency issues regarding exposure to benzene and hematopoietic diseases and served on a working group for the American Petroleum Institute (API). API was reviewing the ability to re-start the Shanghai benzene study.
- Created a health Basis of Design (BOD) to be used as a template across all major capital projects for a Fortune 500 company.
- Served as the corporate representative in a variety of toxic tort cases involving occupational exposures to benzene including the review of toxicological, epidemiological, and occupational studies, depositions, expert reports, and exposure data, and

identifying alternative causes for a variety of claimed health effects. Provided depositions and testimony as the company representative.

**Drug and Alcohol Projects**

- Expert witness on drug and alcohol insurance and worker's compensation cases.
- Conducted Dram shop reconstructions for clients
- Expert witness on medical malpractice cases involving drug/drug interactions, overdose, and underdose scenarios.

**Consumer Products and Pharmaceuticals Projects**

- Investigated the potential contamination of a dietary supplement which may have occurred during shipping.
- Investigated 10 fatalities associated with consumption of incorrect dosage of a manufactured drug.
- Investigated 3 fatalities consumption of contaminated vitamins.
- Wrote company and reviewed third party safety data sheets (SDS) to provide guidance for consumer's safety and exposure mitigations.
- Performed base chemical analyses for globally harmonized system (GHS) of classification and labeling of chemicals under REACH.
- Worked with US Consumer Product Safety Commission (CPSC) to change labeling on gasoline powered generators to reflect updated language on warning labels. Provided data and communications guidance for new labeling.
- Prepared an epidemiological and toxicological assessment of several personal hygiene products.

**Infectious Disease, Water, and Food Safety Projects**

- Created COVID-19 reopening plans for Global Corporations, Domestic Corporations, Municipal Spaces, Food Service Establishments, Universities, and K-12 schools.
- Conducted investigations regarding COVID-19 at dining establishments, manufacturing facilities, healthcare facilities, office complexes, and educational institutions.
- Conducted several large foodborne and waterborne outbreak investigations for recreation, health care, and hospitality clients.
- Tested food products including beverages, commercially packaged food, and commercially prepared food for the presence of unknown substances.
- Conducted facility and site inspections along with writing hazard analysis critical control point plans (HACCP) for large food manufacturing facilities.
- Conducted investigations for mass food spoilage and shorten shelf-life issues for large food manufacturers
- Co-wrote the food safety standard for a large Fortune 500 company. Responsible for implementing the standard in two large office park locations and large corporate meetings with more than a thousand attendees.
- Co-wrote potable and non-potable water standards for a large Fortune 500 company.
- Led several large-scale foodborne outbreak investigations while at CDC.

## Selected Publications

Dunn, K. H., Shulmann, S. **Stock, A. L.**, and Naeher, L. P. (2013). Personal Carbon Monoxide Exposures Among Firefighters at Prescribed Forest Burns in the Southeastern United States. Archives of Environmental & Occupational Health. **68**(1):55-59.

Satin, K., and **Stock, A.** (2010). Conducting Effective Health Impact Assessments in the Oil and Gas Industry. Society of Petroleum Engineers. doi:10.2118/127008-MS.

Holian, A., **Stock, A.**, Migliaccio, C., Noonan, C. and Ward, T. Conference summary: International Biomass Smoke Health Effects (IBSHE) (2007). Inhalation Toxicology. 22(2): 91-93.

Hampson M. N. B. and **Stock, A.L.** (2006). Storm-related carbon monoxide poisoning: lessons learned from recent epidemics. *Undersea & Hyperbaric Medicine.* **33**(4):257-63.

Carbon Monoxide Poisoning After Hurricane Katrina --- Alabama, Louisiana, and Mississippi, August--September 2005. MMWR, 2005, 54(39): 996-998.

Unintentional Non--Fire-Related Carbon Monoxide Exposures --- United States, 2001— 2003. MMWR, 2005, 54(02): 36-39.

Mannino D.M., Holguin F., Greves H.M., Savage-Brown A., Stock A.L., and Jones, R.L. (2004). Urinary cadmium levels predict lower lung function in current and former smokers: data from the Third National Health and Nutrition Examination Survey. Thorax. 59(3):194-8.

Holtz T.H, Ackelsberg J, Kool JL, Rosselli R, Marfin A, Matte T, et al. (2003) Isolated case of bioterrorism-related inhalational anthrax, New York City, 2001. Emerging Infectious Disease. 9(6)698-96.

Heller MB, Bunning ML, France MEB, Niemeyer DM, Peruski L, Naimi T, et al. (2002). Laboratory response to anthrax bioterrorism, New York City, 2001. Emerging Infectious Disease. 8(10): 1097-1102.

Carbon monoxide poisoning resulting from exposure to ski-boat exhaust-Georgia, June 2002. MMWR, 2002, 51(37): 829-830.

## Webcast

Carbon Monoxide Poisoning Prevention Clinical Education (Web On-Demand)-WD2150

https://www.cdc.gov/co/clinicaled_webcast.htm

# APPENDIX B

# TESTIMONY LIST

**Litigation Cases**
**Allison Stock, PhD, MPH, MS**
**Deposition and Expert Testimony**

1. Robert Howell, et. al. vs. Palmdale Oil Company, Inc. et. al. Defendants. United States Circuit Court of the 11th Judicial Circuit, Palm Beach County, Florida. Civil Action No. 50-2016-CA-013844-MB. Chilton Yambert Porter, LLP.

2. Jimmy Thomas vs. Akzo Nobel Coatings Inc, et al. Defendants. United States Alameda County Superior Court. Case No. RG17882514. Duane Morris.

3. Earl Delack, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00056-LG-RHW. Balch & Bingham.

4. Aaron Eden, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00054-LG-RHW. Balch & Bingham.

5. Jason Schooling, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00047-HSO-JCG. Balch & Bingham.

6. Christopher Fox, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. . Case No. 1:18-CV00048-LG-RHW. Balch & Bingham.

7. Joshua Foster, Et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00050-HSO-JCG. Balch & Bingham.

8. Cody Stewart, Et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00050-HSO-JCG. Balch & Bingham.

9. Michael Yarbrough, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00051-LG-RHW. Balch & Bingham.

10. Robert Poole, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00051-

LG-RHW. Balch & Bingham.

11. William Pate, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00046-HSO-JCG. Balch & Bingham.

12. Heidi Cooksey, et. al. vs. Hunt Southern Group, LLC, fka, Forest City Southern Group, LLC, Forest City Residential Management, LLC, Hunt MH Property Management, LLC, et. al. United States District Court for Southern District of Mississippi. Case No. 1:18-CV00056-LG-RHW. Balch & Bingham.

13. William Joseph Jones, Vicki McMillian Jones vs. The Bridge Grill & Pub, LLC, Sysco Atlanta, LLC and R&A Oyster Company, Inc. The Superior Court of Dekalb County, State of Georgia. Case No. 16VC5836. The Cavanagh Law Firm.

14. Ruby Gatlin Bickham/Wilbur Hayes Bickham/James Hayes Bickham vs. Charles Regan Toon/Progressive Security Insurance Company/Teresa Marie Minarik/ABC Insurance Company. 22nd Judicial District Court for The Parish of Washington. Case No. 106514. Briney, Foret & Corry.

15. George Spurling vs Publix Supermarkets. Circuit Seminole County. Case No. 2015-CA-002034-11J-G. Wicker, Smith, O'Hara, McCoy & Ford, P.A.

16. Barbara A. Falzone, As Personal Representative of the Estate of James Falzone, Plaintiff, vs. Wolverine Pride, LLC dba Pirate's Well, A Florida Corporation, John/Jane Doe (Bartender 1), Individually, and John/Jane Doe (Bartender 2), Individually, Defendants. 15th Judicial Circuit Palm Beach County, Florida. Case No. 2014CA014795MBOA. Cifra, Gibson & Dougan, LLP.

17. Breuning v. Safety-Kleen Systems, Inc., et al. Superior Court of the State of California for the County of Los Angeles, Spring Street Courthouse. Case No. JCCP4601. Harris Beach PLLC.

18. Martin G. Ford v Acuity Specialty Products, Inc., et al. In the Circuit Court of Cook County, Illinois County Department, Law Division. Case No. 15L7584. Lewis BrisBois LLP.

19. Sheila D Keenum V. E. I. Du Pont De Nemours And Company, et al. In the Circuit Court of Colbert County, Alabama. Case No. 20-CV-2016-900050.00. Dickie, McCamey & Chilcote.

20. Robert Bourgeois, II v Huntington Ingalls, Inc. f/k/a Northrop Grumman Ship Systems, Inc. f/k/a/ Avondale Industries, Inc., et al. Civil District Court for the Parish of Orleans, State of Louisiana. Division J., Case No. 2019-3536. Salley Hite Mercer and Resor LLC.

21. Cajun Conti LLC, Cajun Cuisine 1 LLC, and Cajun Cuisine LLC d/b/a Oceana Grill v Certain Underwriters at Lloyd's, London. Civil District Court for the Parish of Orleans, State of Louisiana. Section 13. Case No. 2020-02558. Phelps Dunbar LLP.

22. Troy Magee v City of New Orleans. Office of Workers Compensation, City of New Orleans. District 8. Docket No.: 16-03486. The Monson Law Firm, LLC.

23. Marion Eugene Vaughn v Dade Paper & Bag Co. Circuit Court of the 11th Judicial Circuit, In and For Miami-Dade County, Florida. Case No. 2016-25464-CA-01. Fowler White Burnett PA, LLC.

24. Donald A. Alexander v Koppers, Inc. Brooke County Circuit Court, West Virginia. Case No.: 16-C-35. Dickie McCamey & Chilcote, LLC.

25. 730 Crown Invest, LLC and OKO Group, LLC. v Lloyd's Syndicate 1919 - CVS, et al. American Arbitration Association International Center for Dispute Resolution. AAA Case No. 01-20-0010-9417.

26. Mario Badescu Skin Care, Inc. v Sentinel Insurance Company Limited. United States District Court, Southern District of New York. 20-cv-6699 (AT).

27. Gary Melloway v Berryman Products, Inc., et al. Superior Court of the State of California for the County of Alameda. Case No. RG19045434.

28. Summer Kelly McKenzie v. Robin Jean DeLong and William Brooks DeLong, Jr. State of North Carolina, Johnston County. In the General Court of Justice Superior Court Division. 21 CVS 000486.

29. Jammie Park as the administrator of the estate of Kristopher Arron Parks v. Eric Ekstrom & D Benton, Inc. State of North Carolina, County of Wayne. In the General Court of Justice Superior Court Division. Case No. 21 CVS 6.

30. James P. Hofius and Katheryn A. Hofus v. Advances Stores Company, Inc., et al. in the Circuit Court of Mobile County, Alabama. Case No. 02-CV-2018-903080.00.

31. The estate of Patrick McLaughlin, deceased, by Jo McLaughlin as Special Administrator individually and as heir; Kristin Cirmele individually, and heir, vs. Alon USA, et al. District Court Clark County, Nevada. Case No. A-17-759908-C.

32. Calvin M. Costanza vs. Florida Marine Transporters, LLC. 22nd Judicial District Court for the Parish of St. Tammany, State of Louisiana. No. 2017-12934, Division A.

33. In the Matter of an Arbitration Under the Arbitration Act of 1996 between Huntington Ingalls Industries, Inc. and Allied World Assurance Company, Ltd. And Hamilton RE Ltd.

34. Baylor College of Medicine v. XL Insurance American, Inc., et al. Cause No. 2020-53316. In the District Court of Harris County, Texas. 295th Judicial District.

35. Emery A. Beard, et al. v. Advanced Disposal Services Solid Waste Midwest, LLC, et al. State of Indiana, County of Vanderburg, in the Vanderburgh Superior Court No. 5. Cause No. 82D05-1508-CT-004187.

# APPENDIX C

# BASIS OF REPORT DOCUMENTS

# 24 Hour Fitness Worldwide v. Continental Casualty Company, et al.
# Case Documents

**Legal Documents**

- Complaint For Declaratory Relief, 12/21/20
- Plaintiff's Response to Defendant Allied World National Assurance Company's Request for Production, 7/14/21
- Plaintiff's Response to Defendant Continental Casualty Company's First Set of Interrogatories, 7/14/21
- Plaintiff's Response to Defendant Continental Casualty Company's First Requests for Production, 7/14/21
- Plaintiff's Response to Defendant Continental Casualty Company's First Requests for Admission, 7/14/21
- Plaintiff's Response to Defendants Endurance American Specialty Insurance Company; Starr Surplus Lines Insurance Company; Allianz Global Risks US Insurance Company; Liberty Mutual Insurance Company; Certain Underwriters at Lloyd's of London Subscribing to Policy No. WC27C0A190101; Allied World National Assurance Company; QBE Specialty Insurance Company and General Security Indemnity Company of Arizona's First Set of Interrogatories, 7/14/21
- Plaintiff's Response to Defendants Endurance American Specialty Insurance Company; Starr Surplus Lines Insurance Company; Allianz Global Risks US Insurance Company; Liberty Mutual Insurance Company; Certain Underwriters at Lloyd's of London Subscribing to Policy No. WC27C0A190101; Allied World National Assurance Company; QBE Specialty Insurance Company and General Security Indemnity Company of Arizona's First Request for Production, 7/14/21
- Plaintiff's Expert Disclosure Pursuant to Federal Rule of Civil Procedure 26 (a)(2), 10/21/22 with Exhibit A
- Deposition Transcripts
    - Jason Carter, 7/21/22 with Exhibits 1-7
    - Amy Christensen, 6/24/22 with Exhibits 1-3
    - Jeremy Gottlieb, 6/17/22 with Exhibits 1-16
    - Dan Larson on behalf of 24 Hour Fitness, 4/28/22 with Exhibits 1-12 (am session)
    - Dan Larson on behalf of 24 Hour Fitness 30(b)(6), 4/28/22, with Exhibits 1-17 (pm session)
    - Matthew Piro on behalf of 24 Hour Fitness, 4/27/22
    - Matthew Piro on behalf of 24 Hour Fitness 30(b)(6,) 10/5/22 with Exhibits 1-11
    - Tony Ueber, 7/27/22 with Exhibits 1-12

**Other Documents**

- Expert Report of Mercedes R. Carnethon, PhD, 10/21/22 with Exhibits A-B
- McLarens Documents
  - Corona Virus Claim, Letter re: Report No 1-Preliminary, 3/28/20 [CAN-00000037-55]
  - Corona Virus Claim, Letter re: Report No 2-Suplemental, 4/24/20 [CAN-0000083-98]
  - Corona Virus Claim, Letter re: Report No 3-Suplemental, 4/27/20 [CAN-00000073-82]
  - Covid-19 Pandemic, Letter re: Report No 4-Suplemental, 5/15/20 [CAN-00000691-703]
  - Covid-19 Pandemic, Letter re: Report No 5-Suplemental, 6/4/20 [CAN-00000060-72]
  - Covid-19 Pandemic, Letter re: Report No 6-Suplemental, 6/19/20 [ MCL000099-000115]
  - Covid-19 Pandemic, Letter re: Report No 7-Suplemental, 6/22/20 [CAN-00000546-560]
  - Covid-19 Pandemic, Letter re: Report No 8-Suplemental, 9/3/20 [CAN-00000561-583]
  - Covid-19 Pandemic, Letter re: Report No 9-Suplemental, 10/29/20 [CAN-00000683-690]
  - Covid-19 Pandemic, Letter re: Report No 10-Suplemental, 2/22/21 [CAN-00000174-200]
- Exhibit 2 - Allied World National Assurance Company documents – Serrano [AWPLL000148-208]